Math 2 Classwork 14

WARM UP

1 What number am I?

a) When I am taken from 26, the result is 12. _____

b) When I have 18 added to me, the result is 49. _____

c) When I am decreased by 60, the result is 17. _____

2 Insert the correct number:

a) 3,687 has a ____ in the ten's place

b) 3,687 has a ____ in the thousand's place

c) 3,687 has a ____ in the hundred's place

Homework Review

3 Draw two triangles whose intersection is:

(Practice of the separate piece of paper first!)

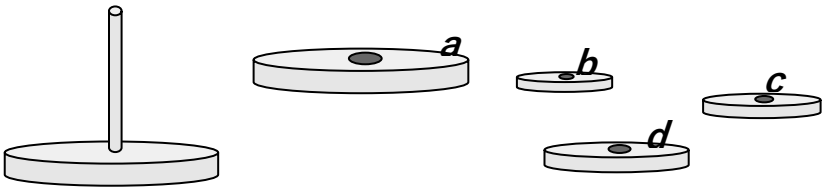
a triangle	a point	a rectangle	a line segment

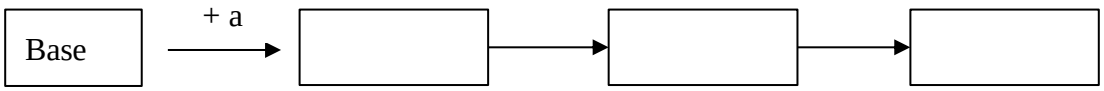
New Material

An algorithm is a set of instructions designed to perform a specific task. This can be a simple process, such as multiplying two numbers, or a complex operation, such as playing a compressed video file.

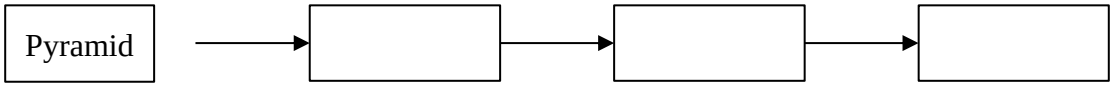
Examples: Any kind of instructions from how to build paper airplanes to how to plant flowers, from rules on how to add numbers to programming. The internet, your Wi-Fi, smartphone, phone, computer, router, satellites, almost everything that has a computer inside uses these algorithms in one way or another to function.

4 a) Write an algorithm for putting the toy together so the size of the pieces gets smaller towards the top.





b) Write the algorithm for taking the toy apart.



5 The following list represents the steps needed in order to mail a letter. Put the items on the list in the correct order.

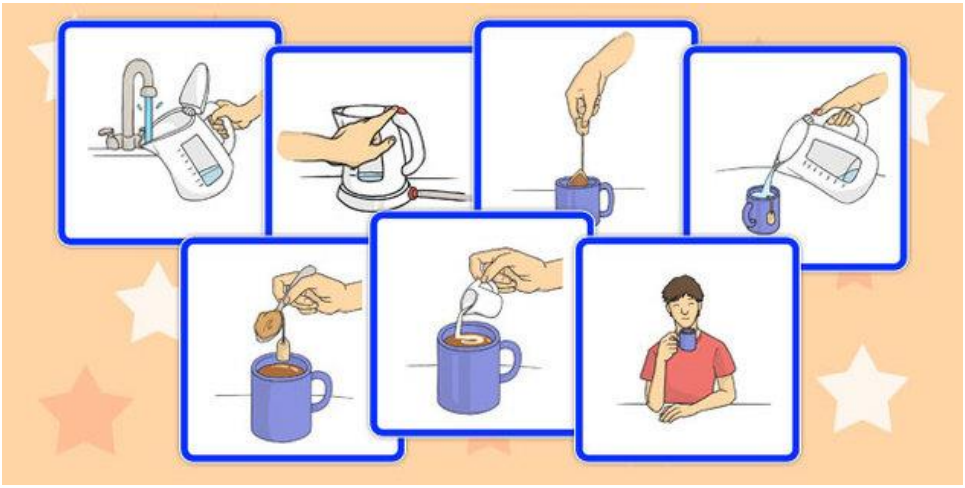
- Put the letter in the mailbox _____
- Take a letter, an envelope and a stamp _____
- Stick the stamp _____
- Go outside to a mailbox _____
- Put a letter inside an envelope _____
- Write a letter _____
- Write address on the envelope _____
- Fold a letter _____

When the algorithm lists the operations from first to last, after performing the last one, we stop.
Such algorithms are called **linear**.
Some algorithms ask that when you reach the last instruction, you go back to the beginning. Such algorithms are called **cycling**.

Example: Algorithm for downhill skiing: every time you get down to the base, you go to a lift to get back up on the mountain. You repeat this cycle until it's time to go home.

6

Let's consider a tea making algorithm.
Write algorithms for making one cup of tea for one guest (**linear**) and for many guests (**cycling**).



a) Steps for making a cup of tea for one guest: _____

_____

b) Steps for making a cup of tea each of the 8 guests: _____

_____

7

Make a "Get Ready for the School" algorithm.

Make one for the in-person days and another one for a remote day.

Which steps of the algorithm could be switched? _____

Which steps could not be switched? _____

What steps can be removed? _____

What other steps can be added? _____

- ___ Eat breakfast
- _1_ Wake up
- __ Get dressed
- __ Comb hair
- __Brush teeth
- __ Prepare a backpack
- __ Make up a bed
- __ Do morning exercises
- __ Go to the bus stop

REVIEW

8 Solve the first row of problems. Using the answers and a mental math, solve the 2nd and 3rd rows.

328 + 70 – 95 = _____	200 – 78 – 86 = _____	689 – 314 + 180 = _____
328 + 72 – 95 = _____	200 – 69 – 86 = _____	690 – 314 + 179 = _____
328 + 73 – 96 = _____	300 – 69 – 86 = _____	690 – 313 + 179 = _____

9 **Calculate:**

a) 20 – 4 – 5 = _____ b) 20 – (4 + 5) = _____

c) 20 – (4 + 5 + 6) = _____ d) 20 – 4 – 5 – 6 = _____

Why did you get the same result for a and b?

Why did you get the same result for c and d?

10 **Math puzzles:**

a) Alex thought of a number. When he added 45 to the number, then subtract 80, he got 915. Which number did Alex think of? _____

b) Emily thought of a number. When she subtracted 615 from it and then added 65, she got 200. What number did Emily think of? _____

c) Alan thought of a number, subtracted it from 770 and got 330. Which number did he think of?

_____